

**Response of
Wisconsin Power and Light Company
to
The Public Service Commission of Wisconsin
Data Request No. 1.02**

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Information Requested By: Ken Detmer
Date Responded: February 16, 2009
Author: Jeffrey Knier
Author's Title: Director, Clean Air Compliance Projects
Author's Telephone No.: (608) 458-4866
Witness: (If other than Author)

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p. 5 par. 2: How does the installation of an SCR affect Unit 5 operation? For example, will the minimum operating load be higher or lower with or without a SCR? What is the anticipated ramp rate from minimum to maximum load?

Response:

WPL does not anticipate any significant impacts on Unit 5 operation. The current cycling operation on Edgewater Unit 5 is expected to continue after the SCR system is installed.

Typically, the SCR reactors are warmed as the boiler load increases. In accordance with the SCR system supplier's O&M manuals, it is important to monitor and control the SCR temperature ramp-up rate during start-up. Generally, there are two limitations that must be considered:

1. The maximum allowed temperature ramp-up rate for the catalyst, as specified by the catalyst manufacturer. A typical catalyst manufacturer limit for ramp rate is 18 degrees F per minute.
2. The maximum allowed temperature ramp-rate of the SCR reactor steel structure, with a typical value of 3 degrees F per minute (180 degrees F per hour).

If the maximum allowed temperature rise for the catalyst is exceeded, the catalyst pores may be damaged due to the quick evaporation of moisture. If the maximum allowed temperature rise for the steel structure is exceeded, serious thermal stress damage of the steel may occur. The maximum allowed steel structure temperature rise of 3 degrees F per minute is the lower of the two limits and is therefore the limiting SCR temperature ramp-up rate. If during SCR start-up, the control room operator receives an alarm (low level set point of 2.5 degrees F per minute is reached), the operator would adjust the firing rate in the boiler to lower the temperature ramp rate of the SCR reactor.